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UNITED STATES DEPARTMENT OF AGRICULTURE

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J. E. GRAF APPOINTED ENTOMOLOGIST IN CHARGE OF  
TRUCK-CROP INSECT INVESTIGATIONS

J. E. Graf, for many years in charge of field operations in connection with Truck Crop Insect Investigations in the Bureau of Entomology, and for some months Entomologist Acting in Charge of these investigations, has been selected as head of the division, effective June 1, 1924.

FOREST INSECT INVESTIGATIONS

F. C. Craighead, Entomologist in Charge.

Dr. F. C. Craighead left Washington on June 19 for an extensive trip to inspect the work at the various Forest Insect field stations, and also the cooperative work being conducted at the Forest Service experiment stations; both the Kaibab Project in Utah and the Southern Oregon-Northern California Project, the largest barkbeetle control projects ever instituted by the Government, will be inspected.

J. M. Miller reports that an insect survey of the cutover areas of the Sierra National Forest in California was completed during May by Mr. Person and Mr. Wagner. The results are of considerable importance, as the survey uncovered a definite relation between insect losses and the marking practice employed on National Forest timber sales. Altogether, six sale areas covering 2,680 acres were cruised as a basis. The marking policy employed on these sales has been to leave from 25 per cent to 50 per cent of the merchantable timber on the area for further increment and to shorten to from 50 to 75 years the period in which a second cutting can be made. It was found that insect losses were not only exceeding the annual increment on some of the areas but were rapidly depleting as well the timber capital that had been reserved. In all cases this loss was caused by an ENDEMIC barkbeetle infestation. The reason back of this condition seems to be that the removal of from 50 per cent to 75 per cent of the original stand by logging does not reduce the amount of barkbeetle loss on an area. The loss of 15 trees per section in a fully stocked stand is not considered serious, but the loss of 15 trees per section on a cutover area may mean the loss of a relatively high per cent of the timber left for increment and second cutting. The situation apparently calls for a remedy which will have to be worked out either through clear cutting of all merchantable timber or the elimination of the insect loss through direct control methods.

Mr. Miller is to give a talk at the joint meeting of the Society of American Foresters and the Ecological Society which will be held at Stanford University June 25 to 28. He will emphasize the need of through cooperation

through foresters and forest entomologists and the necessity for research work to correlate silvicultural and management principles with insect control.

W. D. Edmonston reports, in connection with the Kaibab control project in Arizona, that 64 experimental trees have been cut,--seven groups which vary in size from seven to thirty inches D. B. H.; the bark varies from one-half inch to three inches in thickness. On June 12 broods of the Black Hills beetle were in all stages--larvae, small to full grown, prepupal larvae and pupae, as well as a few immature young adults; these latter were rare. Parent adults in many cases are found alive and working so far as grooving the wood is concerned. All eggs have hatched and some very small larvae are found. Control by suncuring is working very well; the mortality of the broods will be very heavy, and perhaps complete. Some of the logs and trees have been turned and show heavy mortality, on half, and in some cases two-thirds, of the bark surface. In some cases every living thing was dead, even under 2-1/2 inches of bark; parent adults, larvae, pupae, Dipterous larvae and small cerambycid larvae all died under twelve days exposure in the trees cut where the exposure was favorable. Most of the group cuttings would be considered as growing in mixture with other species, but in some cases the groups are surrounded by pines and not in mixture.

Dr. H. E. Burke reports on June 17 that a preliminary examination of the piled slash in the Stanislaus Slash Disposal Area in California indicates that very few insects of primary importance breed in slash which is small enough to pile. The slash piled in the Stanislaus area is mostly sugar pine and white fir under four inches in diameter. There are some piles of yellow pine and incense cedar of about the same diameter. Over 90 per cent of the insects breeding in the slash of the area belong to species of *Chrysobothris* which are not considered at all dangerous. However, this is only one case; in another area under other conditions the results might be vastly different.

Dr. Burke also reports that the European poplar and willow borer (*Cryptorhynchus lapathi* L.) is now in California, where it is doing extensive damage this season to a block of Carolina poplar trees in a nursery at San Mateo. So far as can be determined it was introduced in a shipment of nursery stock from one of the Eastern States.

S. A. Rohwer has just returned from a trip to Nebraska, Colorado, New Mexico, and Arizona for the purpose of investigating the tip-moth injury to pines. He has been seeking information which would make it possible to control the heavy infestation in the Bessey Nurseries of the Nebraska National Forest at Halsey. The tip-moth (*Rhyacionia bushnelli* Busck) is doing very extensive damage at Halsey, rendering it practically impossible for Western yellow and Norway pines to make any appreciable growth. The Jack and Scotch pines grow more rapidly and have an opportunity to make some headway each year. This reforestation project in the sand hills of western Nebraska seems to offer a good opportunity to undertake the control by hymenopterous parasites. After visiting the Nebraska National Forest, Mr. Rohwer spent some time in the Colorado National Forest and then visited some of the National Forests in New Mexico and Arizona. In all of these places there was some evidence of tip-moth injury, but it is not nearly as bad as in Nebraska. The injury done in the parts of New Mexico and Arizona visited is caused by another species of tip-moth (probably *Rhyacionia neomexicana* Dyar).

During the early part of May a plan was formulated by J. C. Evenden of the Coeur d'Alene, Idaho, field station and the District Forester of District 1 of the Forest Service, to institute control measures on a portion of the Missoula National Forest in an attempt to prevent the present Dendroctonus monticolae Hopk. infestation in the lodgepole pine from crossing over the Continental divide into the valuable timber stands on the Deerlodge and Bitterroot National Forests. H. S. Rust, Entomological Ranger, and H. Baurer, crew foreman, spent May 14 to 21 in cruising and marking infested trees. Control work started May 21, with a crew of five men and cook. Two hundred and forty lodgepole pine were cut and peeled, and 770 peeled standing, making a total of 1,010 trees treated, scattered over 24 sections. The work cost approximately \$800.

Maintenance control on the Hunter Gulch area, Helena National Forest, was completed during the month of May by the District Ranger and fire guard. Fifty-six infested trees were treated at a total cost of \$51.71, making the average cost per tree \$0.92.

The experimental control project in the white-pine stand on Independence Creek, Coeur d'Alene National Forest, was completed June 2. Forty-eight thousand board feet were treated at a cost of \$5.00 per thousand.

J. C. Evenden recently returned from an extensive examination of the Boise-Payette Lumber Co. holdings in central Idaho. The control project by logging on the Arling area was examined and found very successful. An examination was also made of a heavy infestation in the lodgepole pine in Long Valley, Payette National Forest, by a species of sawfly larvae. Adults will be reared and a determination secured later. There is a marked decrease in the pine butterfly epidemic throughout this region.

While on a recent examination in the Coeur d'Alene National Forest, H. J. Rust found the spruce budworm becoming well established. One-third to one-half grown larvae were found on white pine, larch, hemlock, white fir, Douglas fir, and Engelmann spruce reproduction. Larvae were also found on large white fir, hemlock, and larch.

The spruce budworm epidemic in central Idaho is still on the increase, and is gradually spreading throughout the timbered areas of the State.

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#### TRUCK CROP INSECT INVESTIGATIONS

J. E. Graf, Entomologist in Charge

J. E. Dudley, Jr., of Madison, Wis., has furnished the following interesting note on the collection of predacious insects from an alfalfa field:

"Yesterday we ran the aphidozer through an acre of alfalfa just before it was cut and secured a very interesting collection of many species of insects. ... We recovered 9,867 syrphid larvae of two principal species, 785 coccinellid larvae, and 482 coccinellid adults, making a grand total of 11,134 predators which were actually counted. There were hundreds of very small



syrphid larvae which escaped us and probably thousands of coccinellid larvae which it was not possible to find or count. This gives some idea of what the total number of predators in all stages must be in an acre of heavily infested alfalfa. I expect to have this test duplicated later on peas. We have colonized most of these predators in a pea field as heavily infested with pea aphid as any of them are at present in an effort to ascertain whether control by predators is possible when they occur in very large numbers."

W. A. Thomas, of Chadbourn, N. C., investigated an outbreak of the corn earworm on tomatoes in South Carolina and reported that this insect has caused considerable injury to the tomato fruits.

R. E. Campbell, of Alhambra, Calif., Secretary of the Pacific Slope Branch of the American Association of Economic Entomologists, attended the meetings at Palo Alto, June 24-25, where he presented a preliminary report on the use of calcium cyanide as a soil fumigant for wireworms.

C. E. Smith, of Baton Rouge, La., reports that the southern green stink-bug (Nezara viridula L.) has been the cause of severe injury to watermelon and cantaloupe vines in Louisiana. At the time of his visit the insect had largely disappeared, but considerable injury had already been caused, the growing tips of the vines having been killed by punctures made by the insect. Cantaloupe vines suffered the heaviest injury.

Reports from the Yakima Valley show that the wireworm appeared in unusually large numbers during the present spring, and has caused heavy injury to miscellaneous crops. This insect, known as Pheletes occidentalis Cand., is closely related to the cultivated-land wireworm Pheletes (Limonius) californicus Mann., which has been a consistent and serious pest of lima beans and sugar beets in the southern half of California.

L. W. Brannon, of the Birmingham station, has just finished scouting the Thomasville, Ga., Mexican bean beetle infestation. This isolated area was first found to be infested in 1921, but during 1922 and 1923 the insect did not spread to any large extent and the infestation was regarded as light. Scouting during the present season has shown that the insect has not only been more abundant than formerly but has extended its range in all directions, invading Grady County, which is located west of Thomasville.

Scouting for the Mexican bean beetle by H. L. Weatherby, under the direction of N. F. Howard, in cooperation with the Georgia State Board of Entomology, has shown that this insect has invaded 16 new counties in Georgia along the southern edge of the area previously known to be infested.

In South Carolina five counties have been added to the infested area to date.

At the present time no extensive scouting by the Bureau has been conducted along the northern border of the infested area.

Additional scouting for this insect, now being conducted in Mississippi by the State plant Board, under the direction of Professor R. W. Harned, has

shown that two additional counties in the latter State have been invaded during the present year.

J. R. Douglass, of Estancia, N. M., reports that field scouts are finding eggs of the Mexican bean beetle in the foothills region of Torrance County, N. M., and that the beetles are still emerging from hibernation.

W. A. Thomas, of Chadbourn, N. C., recently visited Washington for the purpose of discussing the results of his investigations during the present season and formulating plans for the extension of his work during the coming fiscal year.

#### Appointments.

H. L. Weatherby, who has been connected with the Mexican bean beetle work for the past several years, has been given temporary appointment as Field Assistant. He will assist N. F. Howard in the Mexican bean beetle investigations during the summer.

D. M. DeLong, Professor of Entomology, Ohio State University, Columbus, O., has been given temporary appointment as Field Assistant, to investigate the Mexican bean beetle under northern conditions.

Norman Allen and Roy H. Stansel, recent graduates of the Louisiana State University, have been given temporary appointments as Junior Entomologists to assist C. E. Smith, of Baton Rouge, La., in the investigation of truck-crop problems.

Calvin J. Boal and Horace A. Richman have been given temporary appointments as Field Assistants, to assist D. E. Fink, of Riverton, N. J., in truck-crop insect investigations.

Rodney Cecil has been given a probationary appointment as Junior Entomologist, to assist Mr. Howard in the Mexican bean beetle investigations.

John A. McLemore, formerly Agent, has been given a probationary appointment as Junior Entomologist, to assist Mr. Cockerham in the sweet-potato weevil eradication work.

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#### CEREAL AND FORAGE INSECT INVESTIGATIONS

G. A. Dean, Entomologist in Charge

Resolutions expressing appreciation for the valuable service rendered by Chas. Gable, Entomologist in Charge of the San Antonio, Texas, laboratory, have been received from the county commissioners of Llano County, Texas, and the Chamber of Commerce, Llano, Texas. Mr. Gable has been unusually successful this season in his grasshopper control campaigns.

Mr. A. F. Satterthwait made an extended trip by auto during May in Missouri, Kansas, and Nebraska. He not only had an opportunity to study the

insect collections at the Universities of Missouri and Kansas, the Kansas State Agricultural College, and the Warren Knaus collection of Coleoptera at McPherson, but he also had an opportunity to do considerable collecting in the field. He was accompanied on some of the collecting trips by Dr. William Hayes, of the Kansas State Agricultural College, and Warren Knaus, of McPherson, Kansas.

Mr. J. R. Horton, Entomologist in Charge of the Wichita, Kansas, laboratory, and A. F. Satterthwait, Entomologist in Charge of the Webster Groves, Mo., laboratory, attended the meeting of entomologists and agriculturists who met at Kansas City, Mo., in May to discuss and put into operation methods of control for chinch bugs and the Hessian fly in Kansas, Missouri, Nebraska, and Oklahoma.

An extensive corn borer burning and clean-up campaign was conducted during May along the water front and vacant lots of Brooklyn. R. A. Vickery under the direction of Mr. Worthley was in charge of the field work.

George A. Dean, Entomologist in charge of Cereal and Forage Insect Investigations, spent the period from June 2 to June 8 at the field laboratories located at Charlottesville, Va., Columbia, S. C., and Knoxville, Tenn. He also visited the South Carolina Agricultural College at Clemson and the University of Tennessee at Knoxville.

W. B. Turner, Junior Entomologist at the Sacramento, California, laboratory, died June 11, 1924. Mr. Turner, who has been with the Bureau since January, 1910, was a faithful worker. His generosity to and thoughtfulness for those with whom he came in contact will be sadly missed by all who knew him.

C. M. Packard, L. P. Rockwood, T. R. Chamberlin, and S. J. Snow attended and presented papers at the meetings of the Pacific Slope Branch of the American Association of Economic Entomologists held at Leland Stanford Jr. University, June 25-28.

Cecil C. Wilson, graduate student in entomology at the Kansas State Agricultural College, has been appointed Junior Entomologist to work under the direction of C. M. Packard, Entomologist in Charge of the Sacramento, Calif., laboratory. Mr. Wilson reported for duty June 28.

J. S. Wade, Associate Entomologist of the Division of Cereal and Forage Insect Investigations, left June 26 for a few days vacation in the vicinity of Boston and Cape Cod, Mass.

P. R. Myers, Entomologist in Charge of the Carlisle, Pa., laboratory, spent the 23d and 24th of June inspecting wheat seeding plots at Greensboro, N. C. On his return to Carlisle he stopped at Washington to confer with the entomologists of the Museum and the Division of Cereal and Forage Insect Investigations.

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## FRUIT INSECT INVESTIGATIONS

A. L. Quaintance, Entomologist in Charge

A. J. Flebut, formerly with the Bureau, and now with the General Chemical Co., visited the Yakima, Wash., laboratory the last of May.

E. J. Newcomer, in charge of the Bureau's laboratory at Yakima, Wash., writes as follows: "Adults of the codling moth parasite Ascogaster carpocapsae Vier. have again been secured from band material collected in the fall of 1923, indicating that this parasite has become established in the Yakima Valley. Of nearly 2,000 worms collected, only 5 produced parasites. No parasite introductions have been made since 1921."

M. A. Yothers, of the Yakima, Wash., laboratory, was in the Puget Sound region June 10 to 13, making a survey of the infestation of the bulb flies, Merodon equestris F., and Eumerus strigatus Fallen.

Fred E. Brooks, in charge of the Bureau's laboratory at French Creek, W. Va., writes as follows: "Serious injury to young shagbark hickory and pecan trees by Agrilus arcuatus Say has been observed recently in several localities. The larva spends two years in the wood and twice during its life severs the branch or trunk in which it is working. Wood from half an inch to slightly more than an inch in diameter is entirely severed, except the bark, and the part above dies. In one block of young hickory trees in a nursery in Virginia the writer estimated that a hundred dollar's worth of trees had been ruined."

"Injury very similar in nature and extent to that described above is being done by larvae of Pseudibidion unicolor. This species attacks small hickory and pecan trees and also severs branches of larger trees. In a pecan grove at Petersburg, Va., many fruiting branches were breaking during the month of May as a result of cuts made by the larvae of this species."

O. I. Snapp in charge of the Bureau's laboratory at Fort Valley, Ga., writes as follows: "Low temperatures last winter evidently killed many adult curculios in hibernation. Results of hibernation tests conducted at the laboratory show that 88.5 per cent of the beetles which had hibernated under oak leaves were killed during the winter, and 48.6 per cent of those which hibernated in Bermuda grass were killed. Bermuda grass has proven to be the best hibernating quarters for the curculio in this latitude, and during a normal winter the mortality of curculios hibernating in Bermuda grass will only be around 30 per cent. Curculios placed in hibernation cages with no hibernating quarters all die during the winter, showing that the insect will not go under the soil to hibernate."

"On account of the late spring this year the curculio did not appear from hibernation until several weeks later than normal. April and May were unusually cool causing the insect to remain in the pupal stage much longer than usual. These conditions are responsible for the late appearance of first generation adults from the soil. There has been very little mating of first generation adults, and to date no second generation eggs have been deposited. It is doubtful if there will be much of a second generation of the plum curculio in Georgia this year. During a normal season second-generation eggs are deposited in numbers during June, and full-grown second generation larvae are taken by July 1."

It will be remembered that second-brood larvae rendered unmerchantable all of the late varieties of peaches in Georgia in 1920."

H. F. Willard, in charge of the Bureau's laboratory at Honolulu, Hawaii, writes as follows: "Theo. L. Bissell, who has been employed at the Bureau's station at Honolulu as Plant Quarantine Inspector since January, 1921, has been granted a two-year furlough without pay to enable him to do postgraduate work in entomology at Cornell University. Alfred Lutken, a graduate of Mississippi Agricultural College, has been appointed to take Mr. Bissell's place and is now associated with Mr. Willard."

The Federal Horticultural Board has authorized the inspection and sealing of hold baggage at Honolulu for passengers traveling from Hawaii to Pacific Coast ports. This service is proving popular with the traveling public, transportation companies, and inspectors at ports of entry. It decreases to some extent the inconvenience to passengers during the rush of landing, shortens the time steamers are held in quarantine, and enables inspectors to inspect more thoroughly stateroom and other unsealed baggage.

Twenty-two employees of the Japanese beetle laboratory, Riverton, N. J., have taken out personal liability and property damage insurance covering any machine which they may drive, whether owned by the Bureau, the States of Pennsylvania and New Jersey, or a privately owned machine. The expense of this insurance is borne by the employees and varies in amount from \$18.00 per year to \$30.60 per year, depending on the size of the policy and kind of insurance carried. One of the large insurance companies submitted 4 plans as follows: Plan 1, personal liability only, in the amount of \$5,000 and \$10,000. Plan 2, personal liability only, in the amount of \$10,000 and \$20,000. Plan 3, personal liability in the amount of \$5,000 and \$10,000, plus property damage to the amount of \$1,000. Plan 4, personal liability in the amounts of \$10,000 and \$20,000, plus property damage to the amount of \$1,000. The insurance in each case covers the driver and indirectly protects the Bureau's interest in that it will take care of settlements in case of accidents when the men are driving Bureau cars. A similar plan has been worked out which can be applied to temporary inspectors, employed during the summer months. Under this plan the employees can obtain similar insurance at rates varying from \$1.75 to \$2.25 per month, the policy being cancelled at such time as they may desire.

A shipment composed of approximately 50,000 Japanese beetle larvae infested by a dextiid (Prosenia siberata) was recently received from Japan. The total weight of this shipment was approximately 8,000 pounds, and was brought from Seattle, Wash., to Riverton, N. J., in 4 days by parcel post. Owing to the rapid transportation of this shipment, approximately 75 per cent of the insects arrived alive. These will be released during the coming summer in New Jersey and Pennsylvania.

During the summer of 1923 several plots of ground which were infested by the Japanese beetle were inoculated with cultures of *Iseria densa*. No recoveries were made during the autumn of any grubs affected, but in digging this spring grubs were found which were diseased, and this organism was isolated. This particular fungus has not previously been found on white grubs in the central part of New Jersey, and it is felt that the recoveries made this

spring may indicate a possible benefit to be derived from inoculation of lawns or golf courses which are heavily infested with grubs.

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#### STORED PRODUCT INSECT INVESTIGATIONS

E. A. Back, Entomologist in Charge

George Washington University during its recent Commencement conferred the degree of doctor of philosophy upon R. T. Cotton.

The University of Southern California conferred the degree of master of science upon A. O. Larson, June, 1924. Mr. Larson presented a thesis entitled "The Host Selection Principle as Applied to Bruchus quadrimaculatus."

J. C. Hamlin, who received the B. S. degree in 1916 from Clemson College and the M. S. degree in 1918 from the Ohio State University, was transferred June 23 from Southern Field Crop Insect Investigations to this office and has been assigned to the study of dried-fruit insects. Mr. Hamlin left for the Pacific coast June 25. Aside from his experience in the work of the Federal Horticultural Board and this Bureau, Mr. Hamlin was employed during 1921 and 1922 by the Commonwealth of Australia in connection with the introduction of insect enemies of the cactus plant.

C. K. Fisher, joint author with A. O. Larson, presented a paper, "The Possibilities of Weevil Development in Neglected Seeds in Warehouses," before the recent entomological meetings at Palo Alto, Calif.

Dr. R. T. Cotton has recently spent several days at Orlando, Fla., conferring with E. A. Vaughan regarding the work at the Orlando station.

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#### SOUTHERN FIELD CROP INSECTS INVESTIGATIONS

J. L. Webb, Entomologist Acting in Charge

B. R. Coad, in charge of the boll-weevil laboratory at Tallulah, La., made a trip to Washington early in the month for consultation with the Chief of the Bureau and others in regard to the experimental work in airplane dusting for boll-weevil control.

A cooperative project between the Bureau of Entomology and the Bureau of Standards has been inaugurated, having for its object a thorough study of the electrical effects in insecticide dusts. V. E. Whitman, of the Bureau of Standards, has been assigned to the problem. The field work will be carried on at Tallulah, La.

J. U. Gilmore, of the Tobacco Insect Laboratory at Clarksville, Tenn., made a trip to Dillwyn, Va., for the purpose of investigating damage to young tobacco plants by an undetermined species of insect.

F. S. Chamberlin, of the Quincy, Fla., station, made several trips during the month to Tifton, Ga., in the interest of bright tobacco insect investigations.

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### BEE CULTURE INVESTIGATIONS

E. F. Phillips, Apiculturist in Charge

E. L. Sechrist attended a field meeting of Wisconsin beekeepers at Watertown June 21.

E. F. Phillips and J. I. Hambleton will attend the annual Chautauqua for beekeepers held by the University of Wisconsin August 11 to 13. This year the meeting will be held at Fond du Lac.

The Maryland Beekeepers' Association will make its annual visit to the Bee Culture Laboratory at Somerset on the afternoon of July 12. The work of the laboratory will be explained to the visitors.

Erwin W. Tschudi, of Johns Hopkins University, has been appointed temporarily to complete the work on the colors of honey and the making of a honey grader.

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### MISCELLANEOUS INVESTIGATIONS

(Items from the National Museum contributed by S. A. Rohwer)

Dr. W. M. Mann returned to Washington June 11, after a four months' trip through Colombia and several of the Central American republics. He first went to Santa Marta, Colombia, where he spent most of the time in the lowlands, with several short excursions into the mountains, among other places, to the Flye estate, Cincinnati, where so many naturalists have visited. Afterwards he stopped for five days in Panama with Mr. Zetek, and went on to Costa Rica, where he crossed from the East to the West Coast and spent considerable time in the fruit districts of Cartago, Alajuela, and Oretina. From here he went to Honduras, where he went over the territory previously studied in 1920; then into the Truxillo district, newly opened by the United Fruit Company, and on to Guatemala, where most of the time was spent in the fruit districts around Esquintla, Antigua, and on the western slope at Zacapa and Quirigua. Quantities of fruit flies were reared and other economic material gathered, and, in addition, a miscellaneous collection of insects, including some ants.



Prof. Dr. Hirowo Ito, Zoological Laboratory, Tokyo Sericultural College, Japan, spent a few hours visiting the Museum on June 4. He was especially interested in the Orthoptera collections.

P. H. Timberlake, formerly connected with the Hawaiian Sugar Planters' Experiment Station in Honolulu, and who has resigned to accept a position with the California Citrus Experiment Station at Riverside, Calif., spent the week of June 16 to 23 in the U. S. National Museum, studying types of chalcid flies. Mr. Timberlake was on his way to visit relatives in New Hampshire, and expected to return to Riverside, Calif., where he will be permanently located, about July 15.

P. R. Myers, of the Bureau of Entomology Laboratory, Carlisle, Pa., stopped over in Washington June 27 and 28, on his way back to Carlisle from a field trip to North Carolina.

Dr. M. W. Blackman reported on June 15 to work in the Division of Insects on the collections of bark-beetles belonging to the superfamily Scolytoidea. It is hoped that Dr. Blackman will be able to rearrange the entire collection, placing most if it in trays, and probably have an opportunity to do critical work on one or two smaller groups. He brought with him the collection of the subfamily Micracinae, which he has critically studied during the last four months.

John R. Greeley has been under temporary appointment for the last fifteen days in June, and during this period he assisted Mr. McAtee in arranging part of the Hemiptera collection. During the remaining portion of the summer season Mr. Greeley will work under the Biological Survey, and in the fall will return to Cornell to carry on his university studies.

Henry Fox, who has recently been assigned to the work of the Japanese beetle, spent four days in the Museum working on the collection of Orthoptera, securing records for a revised list of the orthopterous insects of New Jersey.

Dr. H. Pittier, a botanist working for the government at Venezuela, was in Washington for about ten days, and while here paid a visit to the Section of Insects to inquire about some of the material which he has forwarded for identification, and become acquainted with some of the men who have been identifying material for him.

James Zetek and family, of Panama, visited the Museum recently. Mr. Zetek has collected a great deal of fine material which has been sent to the Museum for identification and addition to the collection, and has spent considerable time collecting nests, termites, and wasps, and also a series of some of the rare Panamanian ants.

August Busck and Carl Heinrich left for Amherst, Mass., on June 26, to pack the collection of Microlepidoptera formed by the late C. H. Fernald. The Department of Agriculture has recently purchased this collection from Dr. H. T. Fernald to be added to the already extensive collection of Microlepidoptera. The collection contains not only the Fernald types, but also much valuable



material identified by the older microlepidopterists, and will be one of the finest additions to the collection of Lepidoptera in recent years.

Dr. Frank R. Cole, of Redlands, Calif., recently visited the Museum and made examinations of a number of species in the Diptera collection.

While at Fort Collins in June, Mr. Rohwer was given permission to pick out all of the Hymenoptera types in the collection of the Colorado Agricultural College and bring them to Washington as a gift to the National Collection. This extremely valuable lot of types is given as a gift, with the understanding that the types may be borrowed in future by either Dr. C. P. Gillette or the officials of the Colorado Agricultural Experiment Station. The lot includes the types of most of the gall-making Cynipidae described by Gillette, the types of bees described by Professor Cockerell from material belonging to the Colorado Agricultural College, and also the types of certain wasps and sawflies described from the same collections in 1909-1910 by Mr. Rohwer. Altogether, the types of 77 species are included in this very valuable accession, which is one of the outstanding accessions for the fiscal year just closing.

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#### LIBRARY

Mabel Colcord, Librarian

#### New Books

Bach, Michael.

Käferfauna für Nord- und Mitteldeutschland mit besonderer rucksicht auf die preussischen Rheinlande. Coblenz, J. Holscher 1851-60. 4 v.

Becker, Theodor.

Revision der Loewischen Diptera asilica in Linnaea entomologica 1848-49... Wien, F. Wagner, 1923. 91 p. 5 plates.

Bonnet, Amédée.

Précis-atlas de dissections de zoologie... Paris, Librairie Octave Doin, 1924. 416. illus. Insectes, p. 204-255; Arachnides p. 256-263;

Acariens, p.264-270.

Cleghorne, Maud L.

First report on the inheritance of visible and invisible characters in silkworms. Proc. Zool. Soc. London 1918, p. 133-146, 1918.

Dawson, J. F.

Geodephaga britannica; a monograph of the carnivorous ground-beetles indigenous to the British Isles. London, John Van Voorst, 1854. 224 p., 3 pl. References to authors, p. xi-xiv.

Eltringham, Harry

Butterfly lore... Oxford, The Clarendon press, 1923. 180 p., col. front., illus.

Gibbs, W. E.

... Clouds and smokes. Philadelphia, P. Blakiston's Son & Co., 1924. 240 p. illus. plates, diags. "References" at ends of chapters.

Hecht, Otto.

Embryonalentwicklung und symbiose bei *Camponotus ligniperda*. Zeits. f. Wissenschaft Zool. v. 122, p. 173-204, illus. Apr. 17, 1924. Literaturverzeichnis, p. 203.

Kobayashi, Harujiro.

On the habits of house-frequenting flies in Korea. Mitteilungen der Medicinischen hochschule zu Keijo, bd. 7, hft. 4, p. 12-20, 1924.

Kukenthal, Willy.

Handbuch der zoologie. Bd. 1, lfg. 3. Berlin u Leipzig, Walter de Gruyter & Co., illus. Feb. 1924.

Leonardi, Gustavo.

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